



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : Peter J. Burke et al.
Appl. No. : 10/789779
Filing Date : February 27, 2004
Title : SYSTEMS AND METHODS FOR MAKING AND USING
NANO-ELECTRODES
Group Art Unit : 1753
Examiner : To be assigned
Docket No. : 703539.4036

Mail Stop AMENDMENT
Commissioner for Patents
PO Box 1450
Alexandria, VA 22313-1450

INFORMATION DISCLOSURE STATEMENT

Sir:

In accordance with 37 CFR §§ 1.97 and 1.98, the items identified in this Information Disclosure Statement ("IDS") are brought to the attention of the Office. The items are listed on the attached form PTO-1449. In accordance with the USPTO waiver of the requirement under 37 CFR 1.98(a)(2)(i), only copies of foreign patent documents and non-patent literature are enclosed for the convenience of the Examiner.

The items identified in this IDS may or may not be "material" pursuant to 37 CFR § 1.56. The submission thereof by Applicant is not to be construed as an admission that any such patent, publication or other information referred to therein is material or considered to be material (37 CFR § 1.97(h)), or even qualifies as "prior art" under 35 USC § 102 with respect to this invention unless specifically designated by Applicant as such.

CERTIFICATE OF MAILING (37 CFR §1.8)

I hereby certify, pursuant to 37 CFR §110, that I have reasonable basis to expect that that this paper or fee (along with any referred to as being attached or enclosed) would be mailed or transmitted on or before the date indicated with the United States Postal Service with sufficient postage as First Class Mail on the date shown below in an envelope addressed to Mail Stop Amendment, Commissioner for Patents, PO Box 1450, Alexandria, VA 22313-1450.

Dated: February 2, 2005


Mary L. Smith

DOCSOC1:159361.1

Applicant : Peter J. Burke et al.
Appl. No. : 10/789/779
Examiner : To be assigned
Docket No. : 703538.4036

INFORMATION DISCLOSURE STATEMENT FILING PROVISION:

☒ This IDS is believed to be timely in that it is being submitted under 37 CFR § 1.97(b), that is (1) within three months of the filing date of the application, which is not a continued prosecution application filed under § 1.53(d); or (2) within three months of entry of the national stage as set forth in 37 CFR § 1.491; or (3) before the mailing of a first Office action on the merits; or (4) before the mailing of a first Office action after filing a request for continued examination under § 1.114. Thus, no fee is required.

☐ However, if the undersigned is in error in this regard, Applicant respectfully requests that the Office consider this IDS as filed under 37 CFR § 1.97(c), if applicable, and charge the fee due under 37 CFR § 1.17(p) to the deposit account referenced below.

☐ However, if the undersigned is in error in this regard, Applicant respectfully requests that the Office consider this IDS as filed under 37 CFR § 1.97(c), if applicable, and a statement under 37 CFR § 1.97(e) is included below, thus no fee is required.

☐ This IDS is being submitted under 37 CFR § 1.97(c), that is after mailing of a first Office action on the merits, but before a Final Action under 37 CFR § 1.113 or a Notice of Allowance under 37 CFR § 1.311.

☐ The fee due under 37 CFR § 1.17(p) is submitted herewith.

☐ A statement under 37 CFR § 1.97(e) is included below, thus no fee is required. In the event that this IDS is not received before a Final Action or a Notice of Allowance, then Applicant respectfully requests that the Office consider the filing of these papers to be submitted under 37 CFR § 1.97(d) and charge the fee due under 37 CFR § 1.17(p) to the deposit account below.

☐ This IDS is being submitted under 37 CFR § 1.97(d), that is after a Final Action under 37 CFR § 1.113 or a Notice of Allowance under 37 CFR § 1.311, but before payment of the issue fee. A statement under 37 CFR § 1.97(e) is included below. The fee due under 37 CFR § 1.17(p) is submitted herewith.

Applicant : Peter J. Burke et al.
Appl. No. : 10/789/779
Examiner : To be assigned
Docket No. : 703538.4036

STATEMENT UNDER 37 CFR § 1.97(e):

☐ Each item contained in this IDS was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this IDS.

☐ No item contained in this IDS was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing this statement after making reasonable inquiry, no item of information contained in this IDS was known to any individual designated in 37 CFR § 1.56(c) more than three months prior to the filing of this IDS.

PAYMENT AND/OR AUTHORIZATION TO CHARGE FEES:

☐ A check in the amount of _____ is enclosed for the above fee(s).

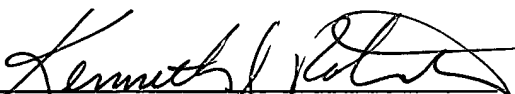
☐ Please charge \$_____ to Deposit Account No. **15-0665** for the above fee(s).

The Commissioner is authorized to charge any fees required by the filing of these papers, and to credit any overpayment to Orrick, Herrington & Sutcliffe's Deposit Account No. **15-0665**.

Respectfully submitted,

ORRICK, HERRINGTON & SUTCLIFFE LLP

Dated: February 2, 2005

By: 
Kenneth S. Roberts
Reg. No. 38,283

ORRICK, HERRINGTON & SUTCLIFFE LLP
4 Park Plaza, Suite 1600
Irvine, CA 92614
949/567-6700 Telephone
949/567-6710 Facsimile

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

| | | | | | |
|---|---|----|---|--------------------------|-------------------|
| Substitute for form 1449A/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(use as many sheets as necessary)</i> | | | | Complete if Known | |
| | | | | Application Number | 10/789779 |
| | | | | Filing Date | February 27, 2004 |
| | | | | First Named Inventor | Burke |
| | | | | Art Unit | 1753 |
| | | | | Examiner Name | To be assigned |
| Sheet | 1 | of | 2 | Attorney Docket Number | 703538.4036 |

U.S. PATENT DOCUMENTS

| Examiner Initials | Cite No. ¹ | U.S. Patent Document | Publication Date MM-DD-YYYY | Name of Patentee or Applicant of Cited Document |
|----------------------|-----------------------|--|--------------------------------|--|
| | | Number-Kind Code ² (if known) | | |
| | AA | | | |
| | AB | | | |
| | AC | | | |
| | AD | | | |
| | AE | | | |
| | AF | | | |
| | AG | | | |
| | AH | | | |

FOREIGN PATENT DOCUMENTS

| Examiner Initials | Cite No. ¹ | Foreign Patent Document | Publication Date MM-DD-YYYY | Name of Patentee or Applicant of Cited Document | T ⁶ |
|----------------------|-----------------------|--|--------------------------------|--|----------------|
| | | Country ³ Number ⁴ Kind Code ⁵ (if known) | | | |
| | BA | | | | |
| | BB | | | | |
| | | | | | |

OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS

| Examiner Initials ¹ | Cite No. ¹ | Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published. | T ² |
|-----------------------------------|-----------------------|---|----------------|
| | CA | A. Bezryadin et al., "Nanofabrication of electrodes with sub-5 nm spacing for transport experiments on single molecules and metal clusters", J. Vac. Sci. Technol. B 15(4), pp. 793-799 (July/August 1997) | |
| | CB | J. Chen et al., "Large On-Off Ratios and Negative Differential Resistance in a Molecular Electronics Device," Science, Vol. 286, pp. 1550-1552 (November 19, 1999) | |
| | CC | M.A. Reed et al., "Conductance of a Molecular Junction", Science, Vol. 278, pp. 252-254 (October 10, 1997) | |
| | CD | P. J. Burke, Nanodielelectrophoresis: Electronic Nanotweezers, published in Encyclopedia of Nanoscience and Nanotechnology, Volume X, pp. 1-19 (2003) | |
| | CE | L. Zheng et al., Towards Single Molecule Manipulation with Dielectrophoresis Using Nanoelectrodes, published in Proceedings of the Third IEEE Conference on Nanotechnology, | |

| | | | |
|-----------------------|------------------|--------------------|--|
| Examiner Signature | DOCSOC1:159359.1 | Date Considered | |
|-----------------------|------------------|--------------------|--|

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. ¹Applicants unique citation designation number (optional). ²See Kinds of U.S. Patent Documents at www.uspto.gov or MPEP 901.04. ³Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 USC 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you are required to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS, SEND TO: Commissioner for Patents, Mail Stop Amendment, P.O. Box 1450, Alexandria, VA 22313-1450

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number

| | | | | | |
|--|---|----|---|--------------------------|-------------------|
| Substitute for form 1449A/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(use as many sheets as necessary)</i> | | | | Complete if Known | |
| | | | | Application Number | 10/789779 |
| | | | | Filing Date | February 27, 2004 |
| | | | | First Named Inventor | Burke |
| | | | | Art Unit | 1753 |
| | | | | Examiner Name | To be assigned |
| Sheet | 2 | of | 2 | Attorney Docket Number | 703538.4036 |

| | | | |
|--|----|---|--|
| | | Volume 1, pp. 437-440 (2003) | |
| | CF | Kong et al, "Quantum Interference and Ballistic Transmission in Nanotube Electron Waveguides," Physical Review Letters, Vol. 87, No. 10, 106801 | |
| | CG | H. W. C. Postma et al, "Manipulation and imaging of individual single-walled carbon nanotubes with an atomic force microscope," Advanced Materials, Vol. 17, pp. 1299-1302 (2000) | |
| | CH | S. Li et al., "Carbon Nanotube Growth for GHz Devices," published in Proceedings of the Third IEEE Conference on Nanotechnology, Vol. 1, pp. 256-258 (2003) | |
| | CI | M. Reed et al., "Molecular Random Access Memory Cell," Applied Physics Letters, Vol. 78, No. 23, pp. 3735-3737 (2001) | |
| | CJ | S.E. Baker et al., "Covalently Bonded Adducts of Deoxyribonucleic Acid (DNA) Oligonucleotides with Single-Wall Carbon Nanotubes: Synthesis and Hybridization," Nano Letters, Vol. 2, No. 12, pp. 1413-1417 (2002) | |
| | CK | K. A. Williams et al., "Carbon Nanotubes with DNA recognition," Nature, Vol. 420, p. 761 (Dec. 2002) | |
| | CL | L. Zheng et al., "Manipulating Nanoparticles in Solution with Electrically Contacted Nanotubes Using Dielectrophoresis, American Chemical Society, Langmuir, Vol. 20, pp. 8612-8619 (2004) | |

| | | | |
|--------------------|------------------|-----------------|--|
| Examiner Signature | DOCSOC1:159359.1 | Date Considered | |
|--------------------|------------------|-----------------|--|

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. ¹Applicants unique citation designation number (optional). ²See Kinds of U.S. Patent Documents at www.uspto.gov or MPEP 901.04. ³Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 USC 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you are required to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS, SEND TO: Commissioner for Patents, Mail Stop Amendment, P.O. Box 1450, Alexandria, VA 22313-1450